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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Tor C Anderson

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EXAMINER

CHENG, JACQUELINE

ART UNIT

PAPER NUMBER

3768

MAIL DATE

DELIVERY MODE

10/03/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/528,922	Applicant(s) ANDERSON ET AL.	
	Examiner JACQUELINE CHENG	Art Unit 3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 16, 17 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/23/05 4/9/07</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. **Claim 16** is objected to because of the following informalities: The ordering of the claims is confusing. The applicant should rewrite the claim to have the step of performing a survey sweep before the step of performing the full-resolution sweep as that is the order the method step is being performed. Also it is unclear when the step of processing the lower-resolution frames is being done. How the claim is currently written it would seem that the step of processing the lower-resolution frame is done after the full-resolution imaging sweep.

Appropriate correction is required.

2. **Claims 16, 17, and 19** are objected to because of the following informalities: It is unclear what constitutes a “full-resolution” scan. What one would consider a “full-resolution” scan could differ. If a result of a method was to provide a very low resolution scan, this could be considered a full-resolution scan. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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4. **Claim 16** is rejected under 35 U.S.C. 102(e) as being anticipated by Carrott (US 6,909,792 B1). Carrott discloses an ultrasonic mammography system which takes a first coarse resolution sweep of a compressed breast to determine the region of interest which could be the entire breast. Then a second imaging sweep is taken at a finer resolution of only the region of interest (which would not include regions outside the lateral or axial extent of the breast) (col. 3 line 44-col. 4 line 21).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 17-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Carrott. Carrott discloses most of what is claimed as disclosed above however does not explicitly disclose deactivating certain transducer elements. However if the region of interest that is to be scanned at the higher resolution is smaller than the transducer array it would be obvious to not use those transducer elements outside the region of interest as they are not in the imaging region. Using those elements would result in an image more than the region of interest. It would also be obvious to one skilled in the art to only process signals within the compressed breast thickness as the object of the invention is to execute the scan in a shorter period of time by only imaging the region of interest, which would be within the breast (col. 6 line 5-43)

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7. **Claim 20** is rejected under 35 U.S.C. 103(a) as being unpatentable over Carrott further in view of Shmulewitz'457 (US 6,027,457). Carrott discloses most of what is claimed as explained above except for the compressive member being a non-stretchable film sheet in a substantially taut state. It would be obvious to use the imaging method of Carrott with any well known breast compression system such as disclosed in Shmulewitz'457. Shmulewitz'457 discloses an ultrasonic mammography unit with a non-stretchable film sheet in a substantially taut state (abstract).

8. **Claims 1, 2, and 6-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shmulewitz'457 in view of Kunii (US 4,681,120). Shmulewitz'457 discloses an apparatus for ultrasound mammography comprising a first compressive flexible member (fig. 1 element 28), a second compressive member which can be made from any acoustically transparent sheet such as polyetherimide material (col. 4 line 15-21, fig. 1 element 18), an ultrasound transducer having a scanning surface (fig. 1 element 16) acoustically coupled to the second compressive member coupled to a drive system (fig. 4) to scan a breast tissue. Shmulewitz'457 does not explicitly disclose details on how the scanning surface is acoustically coupled to the second compressive member so it would be obvious to one skilled in the art to use any well known method of coupling a transducer to the scanning area such as disclosed by Kunii (abstract, col. 4 line 21-23). Kunii discloses an ultrasonic mammography device with a circulating coupling medium in order to keep the coupling agent at a body temperature. It would be obvious to use Kunii in Shmulewitz'457 in order to further the utility of Shmulewitz'457 to provide a more comfortable examination.

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9. **Claims 1-5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shmulewitz'573 (US 5,664,573) in view of Entrekin (US 6,682,484 B1) in view of Kunii further in view of Dines (US 6,574,499 B1). Shmulewitz'573 discloses an apparatus for ultrasound mammography comprising a first compressive flexible member (fig. 1 element 23, a second compressive member (fig. 1 element 19), and an ultrasound transducer (fig. 1 element 16). Although Shmulewitz'573 discloses the ultrasonic transducer as placed on the upper compressive membrane it would be obvious to place the transducer either above or below the breast as disclosed by Entrekin. Entrekin discloses that it is obvious for an ultrasound transducer to scan from either above or below a compressive plate (col. 2 line 13-36).
10. It would also be obvious to one skilled in the art to use any well known method of coupling a transducer to the scanning area such as disclosed by Kunii. Kunii discloses an ultrasonic mammography device with a circulating coupling medium in order to keep the coupling agent at a body temperature (abstract, col. 4 line 21-23). It would be obvious to use Kunii in Shmulewitz'573 in order to further the utility of Shmulewitz'573 to provide a more comfortable examination.
11. Shumulewitz'573 also does not disclose the compressive members being rotatable however it would be obvious to make the compressive members rotatable so that scanning of the breast at any angle can be done such as taught by Dines. Dines teaches an ultrasonic mammography machine with compressive plates wherein the plates can be rotated in a plane parallel to the patient's chest so that a multiple standard mammography views can be taken (col. 9 line 17-33).

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JACQUELINE CHENG whose telephone number is (571)272-5596. The examiner can normally be reached on M-F 10:00-6:30.

13. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN CASLER/
Supervisory Patent Examiner, Art Unit
3737

JC